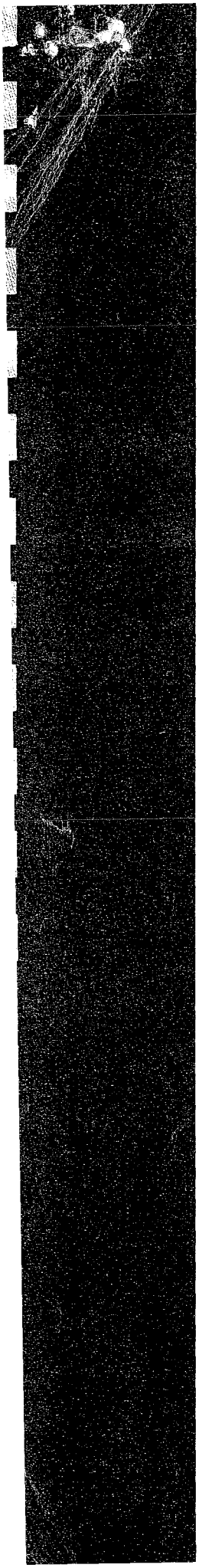
PEOPLES GAS HAWTHORNE WILLOW - HH AS



Site Investigation Summary Report

A Portion of Willow Street Station MGP Site

Prepared for
Peoples Gas Light & Coke Company

February 2001

BARR

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Memorandum

To: Chris Szela, Steven Matuszak – Peoples Gas Light and Coke Company

From: Sara Hodson, Catherine Meuwissen – Barr Engineering Company

Subject: A Portion of Willow Street Station MGP Site, Site Investigation Summary Report

Date: February 16, 2001

Introduction

This document briefly summarizes the results of site investigation activities conducted on a portion of the Former Willow Street Station MGP Site (site). Site investigation activities were conducted in November 2000 on behalf of the Peoples Gas Light and Coke Company (Peoples Gas). The site investigation area (Property) consisted of a 30-foot by 110-foot portion of the site. The Property is currently owned by Peoples Gas.

Background

The Property is located in Cook County, North Township of Chicago, Illinois. The Former Willow Street Station MGP Site occupies approximately 5.7 acres and is bound to the north by the former Hawthorne Avenue Station gas storage facility, to the west by North Branch of the Chicago River, to the south by industrial properties and to the east by Marcey Street. The site is split north and south into two parcels separated by Kingsbury Street. The portion of the former MGP site under consideration in this document includes a 30-foot by 110-foot parcel located north of Willow Street and west of Kingsbury Street (Figure 1). Land use in the area is a mixture of commercial and industrial. There are no residential properties in the immediate vicinity of the Property.

Site investigation activities were conducted according to the *Sampling and Analysis Plan, MGP Site Investigations*, (Barr, October 1999) and the *Laboratory Quality Assurance Manual, STAT Analysis Corporation, MGP Site Investigations* (STAT, October 2000). Subsequent discussions regarding the

potential transfer of the Property and development goals added to the original scope. As a result, a Tier 1 construction worker comparison is included in this letter report. The overall objectives of the site investigation for the Property were to:

- Conduct the site investigation consistent with the requirements of Part 740, Title 35, of the Illinois Administrative Code.
- Assess the presence, magnitude and approximate extent of MGP-related constituents above Tier 1 commercial/industrial remediation objectives in soils and groundwater beneath the site.
- Locate below-grade historical structures, specifically a 2.5 million cubic feet capacity gas holder located in the investigation area, and assess contents and integrity to the extent possible.
- Assess possible impacts present from non-MGP sources.

Field Methods/Analytical Parameters

A total of eight environmental soil borings (SB-01 through SB-08) and two temporary piezometers (PZ-01, PZ-02) were completed at the Property. The borings were advanced on November 27 and 28, 2000. The borings were generally advanced to a depth of 13 to 15 feet below ground surface (bgs). Water samples were collected from the piezometers on November 28 and 30, 2000. A total of fourteen analytical soil samples were collected. Three soil borings, SB-01, SB-02, and SB-03 were advanced in the vicinity of the former 2.5 million cubic feet capacity gas holder as determined from historical site maps provided by Peoples Gas. Five borings, SB-04 through SB-08, were spaced at 25-foot intervals along the western property boundary. The placement of the borings was also dictated by site constraints including the presence of an underground cathodic protection rail along the eastern parcel boundary, storage trailers located at the southern edge of the Property, and the presence of the site structure, Sam's Wine and Spirits.

Soil samples were analyzed for volatile organic compounds (VOCs), semivolatile organic compounds [(SVOCs) including polycyclic aromatic hydrocarbons - PAHs, and phenolics)], total metals, and cyanide. Groundwater samples were analyzed for VOCs, SVOCs (PAHs and phenolics), total metals and general parameters including nitrogen, cyanide, sulfate, and sulfide. Tables 1 through 3 present the sample location, depth, and analytical results for soil and groundwater. The tables include comparisons to Tier 1 residential, commercial/industrial and construction worker screening values for the inhalation, ingestion,

and the soil component of the groundwater ingestion exposure routes as well as surface water comparisons. Figure 1 shows completed soil boring and monitoring well locations.

Field Observation Summary

The uppermost soils at the site are fill composed generally of silty sand with crushed rock fill, clay, and some brick material, wood debris and other non-native material. The silty fill is followed by remolded silt and clay with trace debris and non-native materials. Native soils were typically encountered between approximately 8.5 and 11 feet bgs. These soils are generally undifferentiated glacial deposits characterized as compact, sandy lean clay with trace gravel. Groundwater was encountered at the site between 5 and 7 feet bgs.

SB-01— This boring encountered a silty fill material with rock fragments and wood debris to a depth of 8.5 feet below ground surface (bgs) followed by a native sandy lean clay unit. A slight solvent odor was noted within the fill unit, concentrated in the wood debris. Blue staining was observed in the fill between 3 and 7 feet bgs. Sample recovery was poor throughout the fill unit due to the characteristics of the soil in this interval. An analytical sample was collected between 9 and 11 feet bgs.

SB-02—This boring encountered a silty fill material with rock fragments to a depth of 11 feet bgs followed by a native sandy clay unit. A moderate odor and sheen were observed between 5 and 11 feet bgs. Sample recovery was poor throughout the fill unit due to the characteristics of the soil in this interval. Analytical samples were collected between 4 and 6 feet bgs and 8 to 10 feet bgs.

SB-03—This boring encountered a silty clay fill containing rock and brick fragments to a depth of 9 feet bgs, followed by a native sandy clay unit. A slight odor and blue stained soil were noted between 5 and 9 feet bgs. Soil recovery was poor throughout the fill unit due to the characteristics of the soil in this interval. An analytical sample was collected between 9 and 11 feet bgs.

Soil boring SB-01 through SB-03 were placed at an assumed location (outer edge) of the former gasholder based on historical maps. Evidence of the historical gas holder was not encountered in soil borings SB-01 through SB-03 as anticipated. Further review of historical property maps, conducted by Peoples Gas, indicated the gas holder may be located completely underneath the site structure, Sam's Wine and Spirits. Figure 1 shows the approximate location of the gas holder based on site observations (e.g. not

encountering evidence of the gas holder in SB-01 through SB-03) and historical property maps. Boring SB-03 was advanced to a depth of 21 feet below grade to investigate possible MGP impacts related to the historical gas holder. No odors or sheen were noted below 7 feet of depth.

SB-04—This boring encountered a silty fill with organics and crushed rock followed by remolded silt and clay. The native sandy clay unit was encountered at 8.5 feet bgs. Slight to moderate odors were noted in this boring between 3 and 11 feet bgs. Analytical samples were collected between 1 and 3 feet bgs and 7 and 9 feet bgs.

SB-05—This boring encountered a silt and clay fill unit with a moderate odor and trace sheen. At 10.5 feet of depth native sandy clay was encountered. Analytical samples were collected between 1 and 3 feet bgs and 7 and 9 feet bgs.

SB-06/PZ-01—This boring encountered a silty fill with black staining, a moderate to strong odor and moderate to trace sheen. Blue staining was noted at 9 to 9.5 feet bgs. At 9.5 feet bgs the driller reported hitting a hard object, likely reinforced concrete or steel. The driller moved the augers over five feet (SB-06B) north to continue drilling. The native sandy clay unit was encountered at 11 feet bgs. A temporary piezometer, PZ-01, was installed at location SB-06C (5 feet south of SB-06A) because of the tight soil encountered at SB-06B. Analytical samples were collected between 1 and 3 feet bgs and 7 and 9 feet bgs.

SB-07—This boring encountered clayey silt fill with cinders, wood debris, rock and brick fragments to 13 feet bgs. A moderate to strong odor and trace sheen was noted in the fill unit. The fill was followed by very firm sandy clay. The driller reported hitting a hard object that knocked the augers to an angle at the sampling interval of 9 to 11 feet bgs. Analytical samples were collected from 3 to 5 feet bgs and 8 to 9 feet bgs.

SB-08/PZ-02— This boring encountered silt and clay fill with rock and brick fragments. A moderate to slight odor was noted in the fill unit. Sandy clay was encountered at 10 feet bgs. Analytical samples were collected from 1 to 3 feet bgs and 7 to 8 feet bgs. A temporary piezometer, PZ-02, was installed at this location.

Tier 1 Exposure Route Evaluation

The potential relevant exposure routes for soil are inhalation and ingestion. For groundwater, the potentially relevant exposure routes are the soil component of the migration to groundwater pathway, direct ingestion, and migration to surface water. The analytical results and comparison to Tier 1 screening values for soil and groundwater are presented in Tables 1 through 3. Exceedences of Tier 1 commercial/industrial screening values are discussed below. Tier 1 residential soil screening values and Class I groundwater ingestion screening values are presented in Tables 1 and 2 for informational purposes.

Soil

The Tier 1 inhalation exposure route was evaluated using samples collected from 0 to 10 feet bgs or to the water table (whichever is less). None of the six samples collected above the water table exceeded the commercial/industrial Tier 1 inhalation screening values for VOCs. Soil samples collected from borings SB-05 at 7 to 9 feet bgs and SB-06 at 7 to 9 feet bgs exceed the Tier 1 commercial/industrial inhalation screening value for benzene. However, these exceedences are not relevant for this pathway because they were collected below the water table.

The Tier 1 ingestion exposure route was evaluated using samples collected from approximately 0 to 3 feet bgs. Of the four samples collected within the 0 to 3 feet bgs interval, samples SB-04 and SB-05 exceeded the Tier 1 commercial/industrial ingestion screening values for benzo(a)pyrene and sample SB-08 exceeded ingestion criteria for lead.

Soil samples collected from SB-05 at 7 to 9 feet bgs and SB-06 at 7 to 9 feet bgs exceeded Tier 1 construction worker inhalation screening values for benzene. However, these exceedences are not relevant for this pathway because they were collected below the water table. Sample SB-08 at 1 to 3 feet bgs exceeded Tier 1 construction worker ingestion screening values for lead.

None of the soil samples are considered to be source material as defined by Section 742.215 and 742.220 of Illinois Code.

Groundwater

The Tier 1 soil component of the groundwater ingestion exposure route was evaluated using soil samples collected above the water table. In the evaluation, Tier 1 screening was based on Class II soil to

groundwater migration or pH-dependent Tier 1 screening. Of the six soil samples collected above the water table, there were no reported exceedences. Soil samples SB-05 at 7-9 feet bgs and SB-06 at 7-9 feet bgs exceed the Tier 1 soil component of the groundwater ingestion exposure route for benzene. However, these exceedences are not relevant for this pathway because they were collected below the groundwater table.

The groundwater sample collected from temporary piezometer PZ-01 exceeded Tier 1 Class II groundwater ingestion screening values for benzene and several PAHs. Sample PZ-02 exceeded Tier 1 Class II screening values for cyanide and sulfate. Results of a previous well survey indicate that groundwater is not used within one mile of the site. Chicago public water supply is currently obtained from Lake Michigan.

The North Branch of the Chicago River is classified as a secondary contact water under 35 Illinois, Subtitle C, Part 303, section 303.441. Groundwater samples were compared to the water quality standard set forth in Section 303.441 of the 35 Illinois Administrative Code, Subpart D for informational purposes. It should be noted that groundwater samples were collected 400 feet or more upgradient from the river. Both groundwater samples, PZ-01 and PZ-02, exceeded the surface water standard of the North Branch of the Chicago River for cyanide, although the cyanide concentration did not exceed Class II groundwater ingestion screening values. PZ-02 also exceeded the surface water standards for iron and manganese. The iron and manganese concentrations reported at PZ-02 did not exceed Class II groundwater ingestion screening values.

Please contact Sara Hodson or Catherine Meuwissen at 1-800-270-5017 with any questions or comments regarding this memorandum.

Tables

Table 1
Peoples Gas - Willow
Soil Analysis Data
(concentrations in mg/kg, unless noted otherwise)

Location Date	Illinois - TACO Tier I Values for Soils					SB-01 9-10' 11/27/00	SB-02 4-6' 11/27/00	SB-02 8-10' 11/27/00	SB-03 9-11' 11/27/00	SB-04 1-3' 11/27/00	SB-04 7-9' 11/27/00	SB-05 1-3' 11/28/00	SB-05 7-9' 11/28/00	SB-06 1-3' 11/28/00	SB-06 7-9' 11/28/00
	Industrial/Commercial		Residential		Soil Component of the Groundwater Ingestion Exposure Route										
	Ingestion	Inhalation	Ingestion	Inhalation	Class II pH 6.9-7.24										
Exceedance Key	Bold	Underline	Box	Shade	Italics										
Metals															
Arsenic	3 etln	1200 eln	0.4 e,t	750 eln	120 (1)	1.29	0.958	0.209	0.467	0.157	0.484	0.486	1.97	0.294	0.962
Barium	140000 b	910000 b	5500 b	690000 b	1700 (1)	19.6	14.9	21.8	28.6	5.10	26.6	30.0	29.4	22.3	25.3
Cadmium	2000 brln	2800 eln	78 brln	1800 eln	110 (1)	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500
Chromium	10000 b	420 e	390 b	270 e	-- (1)	3.87	2.69	2.35	2.32	8.62	3.00	4.71	5.41	6.70	4.39
Copper	82000 bn	c	2900 bn	cn	200000 (1)	12.5	2.93	8.00	9.13	39.2	14.2	23.5	22.5	13.1	15.9
Iron	c	c	c	c	-- (1)	3400	3520	2270	4030	8310	5300	3710	5930	24800	5270
Lead	400 k	c	400 k	c	-- (1)	37.3	30.1	6.26	8.34	39.2	14.5	208	39.9	19.4	30.2
Manganese	96000 b	91000 b	3700 b	69000 b	-- (1)	134	164	186	181	33.5	991	147	266	531	228
Mercury	610 bln	540000 bln	23 bsln	10 biln	16 (1)	<0.040	2.22	<0.040	<0.040	0.389	0.268	0.465	0.188	0.199	0.124
Nickel	41000 bl	21000 el	1600 bl	13000 el	3500 (1)	9.66	2.05	9.07	9.89	4.47	13.5	6.75	13.0	5.23	9.03
Selenium	10000 bln	cln	390 bln	cln	4.5 (1)	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00
Silver	10000 b	c	390 b	c	-- (1)	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500
Zinc	610000 b	cl	23000 bl	cl	15000 (1)	19.1	12.2	10.0	13.4	23.4	17.4	62.9	53.1	17.0	28.4

(1) Note: the metals standards shown are taken from the Illinois TACO Tier I (section 742.510) Appendix B, Table D (Class II), (see footnotes "m"), and represent a neutral pH.

-- No criteria

Table 1
Peoples Gas - Willow
Soil Analysis Data
(concentrations in mg/kg, unless noted otherwise)

Location Date	Illinois - TACO Tier I Values for Soils					SB-07 3-5' 11/28/00	SB-07 8-9' 11/28/00	SB-08 1-3' 11/28/00	SB-08 7-8' 11/28/00
	Industrial/Commercial		Residential		Soil Component of the Groundwater Ingestion Exposure Route				
	Ingestion	Inhalation	Ingestion	Inhalation	Class II pH 6.9-7.24				
Exceedance Key	Bold	Underline	Box	Shade	Italics				
Metals									
Arsenic	3 etln	1200 eln	0.4 e,t	750 eln	120 (1)	1.99	3.58	1.58	0.230
Barium	140000 b	910000 b	5500 b	690000 b	1700 (1)	26.6	31.0	38.4	16.2
Cadmium	2000 brln	2800 eln	78 brln	1800 eln	110 (1)	<0.500	<0.500	2.31	<0.500
Chromium	10000 b	420 e	390 b	270 e	-- (1)	3.26	3.87	10.9	2.32
Copper	82000 bn	c	2900 bn	cn	200000 (1)	28.1	26.8	50.2	17.6
Iron	c	c	c	c	-- (1)	6000	7520	8400	3060
Lead	400 k	c	400 k	c	-- (1)	93.1	65.6	1210	16.0
Manganese	96000 b	91000 b	3700 b	69000 b	-- (1)	253	184	211	245
Mercury	610 bln	540000 bln	23 bsln	10 biln	16 (1)	0.296	0.499	1.23	0.691
Nickel	41000 bl	21000 el	1600 bl	13000 el	3500 (1)	8.80	10.5	9.31	8.51
Selenium	10000 bln	cln	390 bln	cln	4.5 (1)	<1.00	<1.00	<1.00	<1.00
Silver	10000 b	c	390 b	c	-- (1)	<0.500	<0.500	<0.500	<0.500
Zinc	610000 b	cl	23000 bl	cl	15000 (1)	59.3	58.9	254	13.0

(1) Note: the metals standards shown are taken from the Illinois TACO Tier I (section 742.510) Appendix B, Table D (Class II), (see footnotes "m"), and represent a neutral pH.

-- No criteria

Table 2
Peoples Gas - Willow
Water Analysis Data
(concentrations in mg/L)

Location Date	Illinois Taco Tier I Values for Groundwater Class I	 Class II	Surface Water Standards - North Branch of the Chicago River	PZ-01 #######	PZ-02 11/30/00
Exceedance Key	Bold	Underline	Box		
Volatiles					
1,1,1-Trichloroethane	0.2 c	1.0 c	--	<0.005	<0.005
1,1,2,2-Tetrachloroethane	--	--	--	<0.005	<0.005
1,1,2-Trichloroethane	0.005 c	0.05 c	--	<0.005	<0.005
1,1-Dichloroethane	0.7	3.5	--	<0.005	<0.005
1,1-Dichloroethylene	0.007 c	0.035 c	--	<0.005	<0.005
1,2-Dichloroethane	0.005 c	0.025 c	--	<0.005	<0.005
1,2-Dichloroethylene	--	--	--	<0.005	<0.005
1,2-Dichloropropane	0.005 c	0.025 c	--	<0.005	<0.005
1,3-Dichloro-1-propene trans	0.001 a	0.005	--	<0.005	<0.005
1,3-Dichloro-1-propene, cis	0.001 a	0.005	--	<0.005	<0.005
2-Hexanone	--	--	--	<0.010	<0.010
Acetone	0.7	0.7	--	<0.025	<0.025
Benzene	0.005 c	0.025 c	--	**1.70**	<0.005
Bromodichloromethane	0.00002 a	0.00002	--	<0.005	<0.005
Bromoform	0.0002 a	0.0002	--	<0.005	<0.005
Bromomethane	0.0098	0.049	--	<0.010	<0.010
Carbon disulfide	0.7	3.5	--	<0.005	<0.005
Carbon tetrachloride	0.005 c	0.025 c	--	<0.005	<0.005
Chlorobenzene	0.1 c	0.5 c	--	<0.005	<0.005
Chlorodibromomethane	0.14	0.14	--	<0.005	<0.005
Chloroethane	--	--	--	<0.010	<0.010
Chloroform	0.00002 a	0.0001	--	<0.005	<0.005
Chloromethane	--	--	--	<0.010	<0.010
Ethyl benzene	0.7 c	1.0 c	--	0.338	<0.005
Methyl ethyl ketone	--	--	--	<0.010	<0.010
Methyl isobutyl ketone	--	--	--	<0.010	<0.010
Methylene chloride	0.005 c	0.05 c	--	<0.010	<0.010
Styrene	0.1 c	0.5 c	--	<0.005	<0.005
Tetrachloroethylene	0.005 c	0.025 c	--	<0.005	<0.005
Toluene	1.0 c	2.5 c	--	0.030	<0.005
Trichloroethylene	0.005 c	0.025 c	--	<0.005	<0.005
Vinyl chloride	0.002 c	0.01 c	--	<0.010	<0.010
Xylenes total	10.0 c	10.0 c	--	0.234	<0.005
Semivolatiles					
2,4-Dimethylphenol	0.14	0.14	--	<0.010	<0.010
2-Methylnaphthalene	--	--	--	0.372	<0.002
Acenaphthene	0.42	2.1	--	**0.711**	<0.002
Acenaphthylene	--	--	--	0.045	<0.002
Anthracene	2.1	10.5	--	0.417	<0.002
Benzo(a)anthracene	0.00013 a	0.00065	--	**0.320**	0.0001
Benzo(a)pyrene	0.0002 a,c	0.002 c	--	**0.283**	0.0001
Benzo(b)fluoranthene	0.00018 a	0.0009	--	**0.164**	**0.0002**
Benzo(g,h,i)perylene	--	--	--	0.014	0.0001
Benzo(k)fluoranthene	0.00017 a	0.00085	--	**0.139**	0.0001
Chrysene	0.0015 a	0.0075	--	**0.312**	<0.0005
Dibenz(a,h)anthracene	0.0003 a	0.0015	--	**0.005**	<0.0001
Dibenzofuran	--	--	--	0.022	<0.002
Fluoranthene	0.28	1.4	--	**1.15**	<0.002
Fluorene	0.28	1.4	--	**0.351**	<0.002
Naphthalene	0.025	0.039	--	**3.52**	<0.001

Table 2
Peoples Gas - Willow
Water Analysis Data
(concentrations in mg/L)

Location Date	Illinois Taco Tier I Values for Groundwater Class I	 Class II	Surface Water Standards - North Branch of the Chicago River	PZ-01 #######	PZ-02 11/30/00
Exceedance Key	Bold	Underline	Box		
o-Cresol	0.35	0.35	--	<0.010	<0.010
p & m Cresol	--	--	--	<0.010	<0.010
Phenanthrene	--	--	--	1.89	<0.002
Phenol	0.1 c	0.1 c	--	<0.010	<0.010
Pyrene	0.21	1.05	--	1.51	<0.002
General Parameters					
Cyanide	0.2 c	0.6 c	0.10	0.380	1.79
Nitrogen Nitrate	10.0 c	100 c	--	<0.100	<0.100
Nitrogen, ammonia as N	--	--	--	6.85	26.0
Sulfate	400 c	400 c	--	<15.0	1700
Sulfide total	--	--	--	0.870	<0.050
Metals					
Arsenic	--	0.2 c	1.0	0.011	<0.010
Barium	2.0 c	2.0 c	5.0	0.702	0.050
Cadmium	0.005 c	0.05 c	1.15	<0.005	<0.005
Chromium	0.1 c	1.0 c	--	<0.010	<0.010
Copper	0.65 c	0.65 c	1.0	<0.010	<0.010
Iron	5.0 c	5.0 c	2.0	0.293	2.46
Lead	0.0075 c	0.1 c	0.1	<0.005	<0.005
Manganese	0.15 c	10.0 c	1.0	0.016	1.40
Mercury	0.002 c	0.01 c	0.0005	<0.0005	<0.0005
Nickel	0.1 c	2.0 c	1.0	<0.010	<0.010
Selenium	0.05 c	0.05 c	1.0	<0.010	<0.010
Silver	0.05 c		0.1	<0.010	<0.010
Zinc	5.0 c	10 c	1.0	0.143	0.076

-- No criteria

Peoples Gas -Willow

Soil Analysis Data Compared with Illinois TACO Tier I Construction Worker Criteria

(concentrations in mg/kg, unless noted otherwise)

Location	Illinois-TACO Tier I Values for Soils		SB-01 9-10'	SB-02 4-6'	SB-02 8-10'	SB-03 9-11'	SB-04 1-3'	SB-04 7-9'	SB-05 1-3'	SB-05 7-9'	SB-06 1-3'	SB-06 7-9'	SB-07 3-5'
Date	Construction Worker		11/27/00	11/27/00	11/27/00	11/27/00	11/27/00	11/27/00	11/28/00	11/28/00	11/28/00	11/28/00	11/28/00
	Inhalation	Ingestion											
Exceedance Key	Bold	Underline											
VOCs													
Benzene	2.1 e	4300 e	0.099	0.010	<0.002	<0.002	0.003	<0.002	0.004	**3.80**	0.009	**2.80**	0.006
Ethyl benzene	58 b	20000 b	<0.005	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.126	0.005	3.98	<0.005
Toluene	42 b	410000 b	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.015	<0.005	0.045	<0.005
Xylenes total	410 d	410000 b	<0.005	0.006	<0.005	<0.005	<0.005	<0.005	<0.005	0.333	<0.005	0.670	<0.005
Semivolatiles													
2,4-Dimethylphenol	c	41000 b	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330
2-Methylnaphthalene	--	--	<0.025	<0.025	<0.025	<0.025	0.029	0.041	0.068	0.291	0.217	1.81	0.090
Acenaphthene	c	120000 b	<0.025	<0.025	<0.025	<0.025	0.099	0.356	0.088	2.56	0.116	1.48	0.027
Acenaphthylene	--	--	<0.025	<0.025	0.031	<0.025	0.357	2.11	1.05	0.979	0.295	0.829	0.589
Anthracene	c	610000 b	<0.025	<0.025	<0.025	<0.025	0.239	1.95	0.516	4.03	0.271	2.56	0.166
Benzo(a)anthracene	c	170 e	<0.025	0.028	0.097	<0.025	0.794	4.71	2.69	5.06	1.24	2.46	0.816
Benzo(a)pyrene	c	17 e	<0.025	<0.025	0.070	<0.025	0.982	4.53	4.13	5.60	0.433	2.75	0.445
Benzo(b)fluoranthene	c	170 e	<0.025	0.031	0.096	<0.025	0.904	3.41	3.23	3.24	0.341	1.50	0.411
Benzo(g,h,i)perylene	--	--	<0.025	0.029	0.046	<0.025	0.483	1.93	2.36	3.11	0.606	1.57	0.266
Benzo(k)fluoranthene	c	1700 e	<0.025	<0.025	0.053	<0.025	0.723	2.38	2.05	2.85	0.410	1.57	0.331
Chrysene	e	17000 e	<0.025	0.038	0.115	<0.025	0.945	5.35	2.87	4.68	1.45	2.62	0.853
Dibenz(a,h)anthracene	c	17 e	<0.025	<0.025	<0.025	<0.025	0.267	0.931	0.317	0.469	0.328	0.328	0.161
Dibenzofuran	--	--	<0.025	<0.025	<0.025	<0.025	0.054	0.249	0.054	0.105	0.113	0.063	0.048
Fluoranthene	c	82000 b	<0.025	<0.025	0.122	<0.025	1.17	6.89	4.67	11.9	1.89	4.64	0.560
Fluorene	c	82000 b	<0.025	<0.025	<0.025	<0.025	0.088	0.705	0.172	2.42	0.033	1.28	0.161
Naphthalene	c	8200 b	<0.025	<0.025	<0.025	<0.025	<0.025	0.127	0.122	6.74	0.368	25.7	0.069
o-Cresol	c	100000 b	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330
p & m Cresol	--	--	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330
Phenanthrene	--	--	<0.025	<0.025	0.047	<0.025	0.679	3.48	1.59	15.9	1.24	7.21	0.194
Phenol	c	120000 b	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330
Pyrene	c	61000 b	<0.025	0.033	0.208	<0.025	1.23	10.3	6.63	15.7	2.24	6.41	0.955
General Parameters													
Cyanide	--	--	0.180	0.360	0.440	<0.100	3.17	4.67	1.58	<0.100	2.46	1.09	3.17
Solids, %	--	--	81.63	74.63	82.31	82.60	74.78	76 16	85.41	73.24	84.00	79.09	74.71
Metals													
Arsenic	25000 eln	61 bln	1.29	0.958	0.209	0.467	0.157	0.484	0.486	1.97	0.294	0.962	1.99
Barium	870000 b	14000 b	19.6	14.9	21.8	28.6	5.10	26.6	30.0	29.4	22.3	25.3	26.6
Cadmium	59000 eln	200 brln	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500

Table 3
Peoples Gas -Willow
Soil Analysis Data Compared with Illinois TACO Tier I Construction Worker Criteria

(concentrations in mg/kg, unless noted otherwise)

Location	Illinois-TACO Tier I Values for Soils		SB-01 9-10'	SB-02 4-6'	SB-02 8-10'	SB-03 9-11'	SB-04 1-3'	SB-04 7-9'	SB-05 1-3'	SB-05 7-9'	SB-06 1-3'	SB-06 7-9'	SB-07 3-5'
Date	Construction Worker		11/27/00	11/27/00	11/27/00	11/27/00	11/27/00	11/27/00	11/28/00	11/28/00	11/28/00	11/28/00	11/28/00
	Inhalation	Ingestion											
Exceedance Key	Bold	Underline											
Chromium	8800 e	4100 b	3.87	2.69	2.35	2.32	8.62	3.00	4.71	5.41	6.70	4.39	3.26
Copper	c	8200 b	12.5	2.93	8.00	9.13	39.2	14.2	23.5	22.5	13.1	15.9	28.1
Iron	c	c	3400	3520	2270	4030	8310	5300	3710	5930	24800	5270	6000
Lead	c	400 k	37.3	30.1	6.26	8.34	39.2	14.5	208	39.9	19.4	30.2	93.1
Manganese	8700 b	9600 b	134	164	186	181	33.5	991	147	266	531	228	253
Mercury	52000 bln	61 bsln	<0.040	2.22	<0.040	<0.040	0.389	0.268	0.465	0.188	0.199	0.124	0.296
Nickel	440000 el	4100 bl	9.66	2.05	9.07	9.89	4.47	13.5	6.75	13.0	5.23	9.03	8.80
Selenium	cln	1000 bln	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00
Silver	c	1000 b	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500
Zinc	cl	61000 bl	19.1	12.2	10.0	13.4	23.4	17.4	62.9	53.1	17.0	28.4	59.3

Table 3
Peoples Gas -Willow
Soil Analysis Data Compared with Illinois TACO Tier I Construction Worker Criteria

(concentrations in mg/kg, unless noted otherwise)

Location	Illinois-TACO Tier I Values for Soils		SB-07 8-9'	SB-08 1-3'	SB-08 7-8'
Date	Construction Worker		11/28/00	11/28/00	11/28/00
	Inhalation	Ingestion			
Exceedance Key	Bold	Underline			
VOCs					
Benzene	2.1 e	4300 e	0.061	0.007	<0.002
Ethyl benzene	58 b	20000 b	0.022	<0.005	<0.005
Toluene	42 b	410000 b	0.045	<0.005	<0.005
Xylenes total	410 d	410000 b	0.135	<0.005	<0.005
Semivolatiles					
2,4-Dimethylphenol	c	41000 b	<0.330	<0.330	<0.330
2-Methylnaphthalene	--	--	0.139	0.253	<0.025
Acenaphthene	c	120000 b	0.321	0.138	<0.025
Acenaphthylene	--	--	0.459	1.66	0.049
Anthracene	c	610000 b	0.742	0.336	<0.025
Benzo(a)anthracene	c	170 e	2.02	1.35	0.082
Benzo(a)pyrene	c	17 e	1.86	0.621	0.035
Benzo(b)fluoranthene	c	170 e	0.414	1.07	<0.025
Benzo(g,h,i)perylene	--	--	0.469	0.963	0.029
Benzo(k)fluoranthene	c	1700 e	0.744	0.882	0.037
Chrysene	e	17000 e	1.93	1.77	0.097
Dibenz(a,h)anthracene	c	17 e	0.256	0.482	<0.025
Dibenzofuran	--	--	0.089	0.144	<0.025
Fluoranthene	c	82000 b	2.93	1.00	0.047
Fluorene	c	82000 b	0.775	0.148	<0.025
Naphthalene	c	8200 b	0.570	1.40	<0.025
o-Cresol	c	100000 b	<0.330	<0.330	<0.330
p & m Cresol	--	--	<0.330	<0.330	<0.330
Phenanthrene	--	--	2.34	0.310	<0.025
Phenol	c	120000 b	<0.330	<0.330	<0.330
Pyrene	c	61000 b	4.12	1.68	0.080
General Parameters					
Cyanide	--	--	1.10	6.79	2.12
Solids, %	--	--	73.91	77.93	78.31
Metals					
Arsenic	25000 eln	61 bln	3.58	1.58	0.230
Barium	870000 b	14000 b	31.0	38.4	16.2
Cadmium	59000 eln	200 brln	<0.500	2.31	<0.500

Table 3
Peoples Gas -Willow
Soil Analysis Data Compared with Illinois TACO Tier I Construction Worker Criteria

(concentrations in mg/kg, unless noted otherwise)

Location	Illinois-TACO Tier I Values for Soils		SB-07 8-9'	SB-08 1-3'	SB-08 7-8'
Date	Construction Worker		11/28/00	11/28/00	11/28/00
	Inhalation	Ingestion			
Exceedance Key	Bold	Underline			
Chromium	8800 e	4100 b	3.87	10.9	2.32
Copper	c	8200 b	26.8	50.2	17.6
Iron	c	c	7520	8400	3060
Lead	c	400 k	65.6	1210	16.0
Manganese	8700 b	9600 b	184	211	245
Mercury	52000 bln	61 bsln	0.499	1.23	0.691
Nickel	440000 el	4100 bl	10.5	9.31	8.51
Selenium	cln	1000 bln	<1.00	<1.00	<1.00
Silver	c	1000 b	<0.500	<0.500	<0.500
Zinc	cl	61000 bl	58.9	254	13.0

Footnotes

The following footnotes are the from the Illinois Administrative Code, Part 742, Tiered Approach to Corrective Action Objectives, Appendix B, Table A and apply to the column entitled "Illinois TACO Tier I Values for Soils".

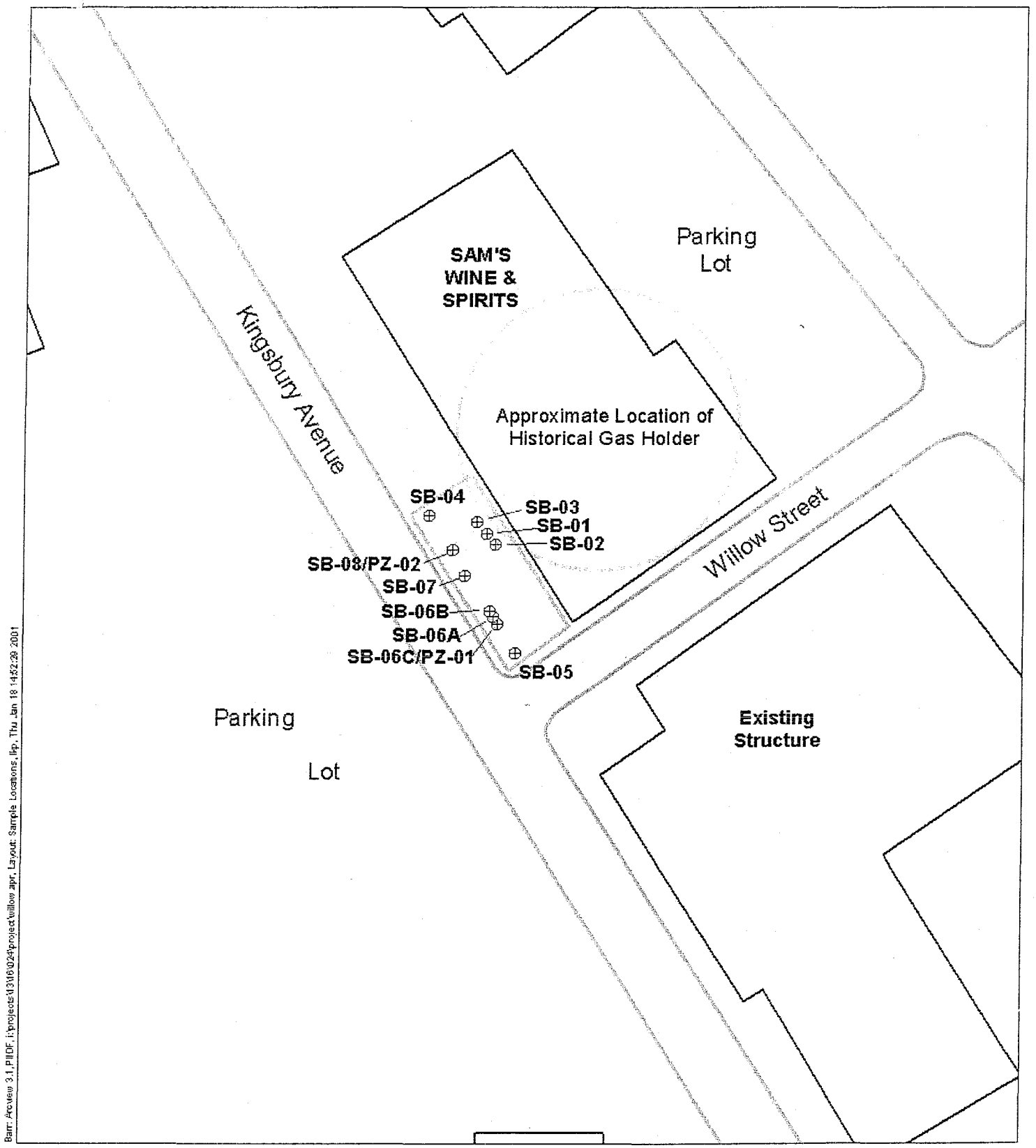
a	Soil remediation objectives based on human health criteria only.
b	Calculated values correspond to a target hazard quotient of 1.
c	No toxicity criteria available for this route of exposure.
d	Soil saturation concentration (C{sat})=the concentration at which to absorptive limits of the soil particles, the solubility limits of the available soil moisture, and saturation of soil pore air have been reached. Above the soil saturation concentration, the assumptions regarding vapor transport to air and/or dissolved phase transport to groundwater (for chemicals which are liquid at ambient soil temperatures) have been violated, the alternative modeling approaches are required.
e	Calculated values correspond to a cancer risk level of 1 in 1,000,000.
f	Level is at or below Contract Laboratory Program required quantitation limit for Regular Analytical Services (RAS).
g	Chemical-specific properties are such that this route is not of concern at any soil contaminant concentration.
h	A preliminary goal of 1 ppm has been set for PCBs based on Guidance on Remedial Actions for Superfund Sites with PCB contamination, EPA/540G-90/007, and on USEPA efforts to manage PCB contamination. See 40 CRF 761.120 for USEPA "PCB Spill Cleanup Policy". This relation goes on to say the remediation goal for an unrestricted area is 10 ppm and 25 ppm for a restricted area, provided both have at least 10 inches of clean cover.
I	Soil remediation objective for pH of 6.8. If soil pH is other that 6.8, refer to Appendix B, Tables C and D in this Part.
j	Ingestion soil remediation objective adjusted by a factor of 0.5 to account for dermal route.
k	A preliminary remediation goal of 400 mg/kg has been set for lead based on Revised Interim Soil Lead Guidance for CERCLA Sites and RCRA Corrective Action Facilities, OSWER Directive #9355.4-12.
l	Potential for soil-plant-human exposure.
m	The person conducting the remediation has the option to use: (1) TCLP or SPLP test results to compare with the remediation objectives listed in the Table; or (2) the total amount of contamination in the soil sample results to compare with pH specific remediation objectives listed in Appendix B, Table C or D of this Part. (See Section 742.510.) If the person conducting the remediation wishes to calculate soil remediation objectives based on background concentrations, this should be done in accordance with Subpart D of this Part.
n	The Agency reserves the right to evaluate the potential for remaining contaminant concentrations to pose significant threats to crops, livestock, or wildlife.
o	For agrichemical facilities, soil remediation objectives for surficial soils which are based on field
p	For agrichemical facilities, soil remediation objectives based on site-specific background concentrations of Nitrate as N may be more appropriate. Such determinations shall be conducted in accordance with the located in Subparts D and I of this Part.
q	The TCLP extraction must be done using water at a pH of 7.0.
r	Value based on dietary Reference Dose.
s	Value based on Reference Dose for Mercuric Chloride (CAS No. 7487-94-8).
t	Note that Table value is likely to be less than background concentration for this chemical' screening or remediation concentrations using the procedures of Subpart D of this Part.
u	Value based on Reference Dose for thallium sulfate (CAS No. 7446-18-6).

Footnotes

The following footnotes are the from the Illinois Administrative Code, Part 742, Tiered Approach to Corrective Action Objectives, Appendix B, Table E and apply to the column entitled "Illinois TACO Tier I Values for Groundwater".

a	The groundwater Health Advisory concentrations is equal to ADL for carcinogens.
b	Oral Reference Dose and/or Reference Concentration is under review by USEPA. Listed values subject to change.
c	Value listed is also the Groundwater Quality Standard for this chemical pursuant to 35Ill.Adm.Code 620.410 for Class I Groundwater or 35Ill.Adm.Code 620.420 for Class II Groundwater.

Figures



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LEGEND

⊕ Borings

Proposed Property Transfer Area

N
W E
S

40 0 40 80 120 Feet

10 0 10 20 30 40 Meters

Figure 1

SAMPLE LOCATIONS
WILLOW STREET
STATION SITE
Peoples Gas Light and Coke
Chicago, IL